

Serial No. 09/785,458

Attorney Docket No. 016907/0935

Sub C1  
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11. (Amended) A magnetoresistance effect element comprising:

a spin valve film comprising a first ferromagnetic layer, a nonmagnetic layer, a second ferromagnetic layer, and an antiferromagnetic layer, wherein the nonmagnetic layer is provided between the first and second ferromagnetic layers, and the antiferromagnetic layer is provided adjacent to the first or second ferromagnetic layer, the antiferromagnetic layer comprising an alloy of NM, where N comprises Pt and M comprises Mn.

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12. (Amended) A magnetoresistance effect element as set forth in claim 11, wherein said NM alloy consists essentially of  $Pt_{100-x}Mn_x$ , where x is an atomic % number in the range of  $24 \leq x \leq 75$ .

13. (Amended) A magnetoresistance effect element as set forth in claim 12, wherein said NM alloy consists essentially of  $Pt_{100-x}Mn_x$ , where x is an atomic % number in the range of  $40 < x \leq 70$ .

14. (Amended) A magnetoresistance effect element as set forth in claim 12, wherein said alloy consists essentially of  $Pt_{100-x}Mn_x$ , where x is an atomic % number in the range of  $24 \leq x \leq 35$ .

15. (Amended) A magnetoresistance effect element as set forth in claim 11, wherein N comprises Pt and at least one element N' selected from the group consisting of Fe, Co, Pd and Ni.

16. (Amended) A magnetoresistance effect element as set forth in claim 15, wherein said alloy has a ratio between Pt and N' represented by  $Pt_{100-y}N'_y$ , where y is an atomic % number in the range of  $0 < y < 30$ .

17. (Amended) A magnetoresistance effect element as set forth in claim 11, wherein said NM alloy has a tetragonal crystalline structure.

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18. A magnetoresistance effect element as set forth in claim 11, wherein the first ferromagnetic layer comprises a metal selected from the group consisting of Fe, Ni, Co, FeNi, FeCo, FeCoNi, and an alloy thereof.

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19. A magnetoresistance effect element as set forth in claim 11, wherein the antiferromagnetic layer has a film thickness larger than that of the first ferromagnetic layer.

20. (Amended) A magnetoresistance effect element as set forth in claim 11, wherein said M comprises Mn and at least one element M' selected from the group consisting of transition metals, rare earth metals, and half metals.

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22. (Amended) A magnetoresistance effect element as set forth in claim 11, wherein said NM alloy consists essentially of  $Pt_{100-x}Mn_x$ , where x is an atomic % number in the range of  $40 < x \leq 75$ .

23. A magnetoresistance effect element as set forth in claim 16, wherein y is an atomic % number in the range of  $1 \leq y \leq 10$ .

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26. A magnetoresistance effect element, comprising an exchange coupled film having a first ferromagnetic layer and an antiferromagnetic layer, the antiferromagnetic layer being on the first ferromagnetic layer, and the exchange coupled film being substantially free of corrosive pits, when the exchange film is exposed to an atmosphere having a relative humidity of 90%, at a temperature of 90 degrees centigrade for a time duration of 48 hours.

27. A magnetoresistance effect element as set forth in claim 26, wherein the exchange coupled film has less than a 10% probability for occurrence of corrosive pits.

28. A magnetoresistance effect element as set forth in claim 26 wherein the antiferromagnetic layer comprises an alloy of NMn, where N is at least one element selected from the group consisting of Cu, Ru, Rh, Re, Pd, Pt, Ag, Au, Os, and Ir.

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38. A magnetic head comprising a magnetoresistance effect element as set forth in claim 11.

Please add the following new claims:

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39. A magnetoresistance effect element as set forth in claim 11, wherein the antiferromagnetic layer is provided on the ferromagnetic layer.

40. A magnetoresistance effect element comprising:  
a spin valve film having a first ferromagnetic layer, a nonmagnetic layer, a second ferromagnetic layer, and an antiferromagnetic layer, wherein the nonmagnetic layer is provided between the first and second ferromagnetic layers, and the antiferromagnetic layer is provided on the first or second ferromagnetic layer, the antiferromagnetic layer comprising an alloy of PtMn.

41. An exchange coupling film comprising:  
an antiferromagnetic layer comprising an alloy of NM, where N comprises Pt and M comprises Mn, said antiferromagnetic layer having a tetragonal crystalline structure, and a first ferromagnetic layer consisting essentially of FeCo.

42. A magnetoresistance effect element comprising a spin valve film including the exchange coupling film of claim 41.